DOCUMENT RESUME

ED 200 635 TM 810 222

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TITLE Who is Engaged More--Teacher or Students? An Analysis of How Activity Structures Affect Student Learning Engagement.
PUB DATE Apr 81
NOTE 17p.; Paper presented at the Annual Meeting of the American Educational Research Association (65th, Los Angeles, CA, April 13-17, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Arithmetic; *Class Organization; *Classroom Observation Techniques; Elementary Education; *Learning Activities; Reading Instruction; *Student Behavior; *Teacher Participation
IDENTIFIERS Recitation

ABSTRACT

Structural characteristics of classroom activities and student and teacher engagement behaviors were investigated. Observer teams collected data on the structure of activities, student engagement behaviors, and teacher behaviors in arithmetic and reading lessons in six elementary classrooms in a middle class, suburban school district. The structure of academic activity was characterized by six dimensions (group size and teacher presence, supervision, student choice of work group, task, process, and product) jointly referred to as structural configurations. Three general structural configurations were predominant: (1) recitation, characterized by large, teacher-directed group activity; (2) class-task, characterized by various assignments being given to small groups and/or individuals; and (3) multitask, which typically involves independent work of individuals or small, student-directed groups and had the greatest amount of student choice in terms of specific tasks, work partners, processes for completing tasks, and products or outcomes of tasks. Structural changes occurred throughout lessons, but the frequency and extent of the changes varied across teachers. Teachers obtained comparable student engagement levels in different ways. Student engagement appeared to interact with activity structure and teacher engagement. A reliable, cost-effective method was developed. (Author/RL)

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ABSTRACT

Who is Engaged More -- Teacher or Students?

An Analysis of How Activity Structures Affect Student Learning Engagement

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Donald M. Miller

This study investigated relationships between two major variables: (1) structure of activities and (2) student and teacher engagement in academic activity.

Observer teams collected data on the structure of activities, student engagement behaviors, and teacher behaviors in arithmetic and reading lessons in six elementary classrooms.

Three general structural configurations were identified. While statistically significant differences were not obtained, student engagement levels associated with each general configuration appeared to have different characteristics. For five of the six teachers, the activity structure configurations employed varied across subject areas. The uniqueness with which activities were structured was characterized as a teacher's instructional signature.

TM 810 222

Who is Engaged More -- Teacher or Students? An Analysis of How Activity Structures Affect Student Learning Engagement*

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Teachers structure classroom activities in various ways. A primary goal of these arrangements is the facilitation of student learning engagement and achievement outcomes. Some activity structures appear to call for intensive involvement of the teacher as well as intensive engagement of students. Other arrangements appear to permit the teacher mobility and peripheral involvement. How do these various activity structures affect teachers and students? Do they have differential effects on teachers and students?

Students' learning and achievement have been linked to the amount of time they spend engaged in learning tasks (Evertson, 1980; Fredrick, Walberg, and Rasher, 1979; Samuels and Turnure, 1974). With the wide variation of achievement levels across classrooms and differences in the structure of activities employed by teachers, it would seem fruitful to focus on clarifying the relationship between student learning engagement and the structure of academic activities. Does the structure of an activity

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* Paper presented at the Annual Meeting of the American Educational Research Association, 1981

affect student learning engagement? Can the structure of an activity be described in a manner that is helpful to practitioners? These are some of the questions that guided the present investigation.

Two major variables were investigated: 1) The structure of activities involving teachers and students, and 2) student and teacher engagement in academic activity.

Activity structure was defined as the organization and operation of classroom learning activity. It was measured on several dimensions; group size, teacher presence or absence, type of supervision, student choice of work group partners, tasks, processes, and products.

The importance of this concept has emerged during the past thirty years. In education the conception of teaching situations as activity structures is rooted in the work of Dreeben (1968) and Bidwell (1972). A basic assumption is that what children learn is derived from the nature, or pattern, of their daily experiences. From the psychological literature the activity structure concept emerges through studies such as those by Breer and Locke (1965). They argued that one's recognition of the instrumental value of certain patterns of action resulted in the development of task-specific behaviors eventually generalized to a variety of task situations. The relationship between task activities and intragroup relations has long been recognized by sociologists studying industrial work group settings. For example, both Homans (1950) and Sayles (1958) found that the organization, or internal structuring of tasks, exerts considerable influence over the nature of worker relations and productivity. More recently, Bossert (1979) found similar associations in elementary school classrooms.

In our investigation a wholistic view of structures was employed. Structures were viewed as consisting of clusters or configurations of structural elements describing teacher and student classroom activities.

Student learning engagement is a variable familiar to classroom researchers and was employed in the conventional form of student time-on-task. Engagement referred to the time during which the student is actively engaged (or involved) in learning. J.B. Carroll (1963) first articulated a model of school learning in which time and student engagement played a major role. Carroll's basic thesis was that the degree of learning is a function of the ratio of the amount of time a student actually spends on a task to the total time needed. The time actually spent engaged in learning is affected by internal conditions of the student and situational conditions. Student engagement has been incorporated into several, more recent models (e.g., Bloom, 1974; Harnischfeger and Wiley, 1976; Anderson, 1976; Academic Learning Time Model, 1978) which have extended, in various directions, Carroll's original work.

Method[1]

Observations were made of six elementary school classrooms in a middle-class, suburban school district. Approximately 10 observation hours were spent in each classroom. The data base consists of about sixty observation hours. Half of this time was devoted to arithmetic lessons and half to reading lessons.

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[1]The basic procedural plan is credited to Bryce B. Hudgins, Washington University, St. Louis, 1979-1980.

A two-person team collected information on the classroom context, the structure of activities, teacher behavior, and student engagement behaviors. Qualitative, contextual data (context and teacher behavior) and quantitative data (activity structure and student engagement) were recorded simultaneously.

Observer 1 focused on student engagement within student-specific learning environments. Table 1 shows the codes used by Observer 1.

Insert Table 1 about here

The general data collection procedure employed by Observer 1 has been called "point-time sampling" (Kowatrakul, 1959). Its application has taken a variety of forms.[2] During a 40 to 50 minute lesson an observer makes several sweeps, or observation cycles of the class. A sweep is complete when an observation of every student has been made. The duration of each observation is approximately 10 seconds. During this 10 second "snap shot"[3] the observer records information concerning the student's learning environment (i.e., activity structure) and his/her engagement behavior.

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[2] For examples see Kowatrakul, 1959; Edminston & Rhoades, 1959; Perkins, 1964; Gump, 1967; Lahaderne, 1968; Cobb, 1972; Kounin, 1970; Grannis, 1972; Anderson, 1975; Anderson & Evertson, 1978; Good & Beckerman, 1978.

[3] Acknowledgement for the term "snap shot" is given to Stallings (1975).

After the student's activity structure and engagement behavior are recorded the observer moves to the next student and so on through the entire class. This pattern of successive, snap shot observations continues throughout the lesson.

Observer 2 wrote a chronological description of the context, emphasizing several broad aspects of the teacher's behavior. These data served to elaborate on the instructional context within which the students participated, the nature of teacher involvement, and the content of the activities. Table 2 shows the codes used by Observer 2.

Insert Table 2 about here

Results

The structure of academic activity was characterized by six dimensions (group size & teacher presence, supervision, student choice of work group, task, process, & product) jointly referred to as structural configurations. Three general, structural configurations were predominant. These general configurations were similar to those described by Bossert (1979) and his labels were given to the three predominant configurations.

"Recitation", the most frequently observed configuration, is characterized by large, teacher-directed group activity. The teacher directs and questions the children. Children comply, raise their hands to respond, and answer when recognized by the teacher. Their work is continuously supervised. Typically, all students in the group work on

a single task. There is no student choice of tasks, partners, processes, or products.

A second, general structural configuration is called "class-task". Small groups and/or individuals are given various assignments, although students occasionally choose their own tasks and partners. There is more peer collaboration within this configuration. The teacher does not continuously supervise the students' work as in the case of the recitation configuration.

The third general configuration identified is called "multitask", which typically involves independent work of individuals or small, student-directed groups. This configuration contains the greatest amount of student choice in organizing and completing their work. Both class-task configurations and multitask configurations involve small group and individual work. Bossert distinguishes between the two configurations with respect to the number of tasks occurring simultaneously. There is also considerably more student choice during the multitask configuration. Intermittent or no supervision is characteristic of the multitask configuration.

Recitation is the most highly structured configuration. Multitask is the least structured configuration and has the greatest amount of student choice in terms of specific tasks, work partners, processes for completing tasks, and products or outcomes of tasks. Class-task falls between recitation and multitask as a moderately structured configuration with some student choice.

Based on values of the activity structure dimensions, and with reference to the field narrative of the context and teacher behaviors, twenty-four configurations were categorized as either recitation, class-task, or multitask (recitation, n=9; class-task, n=7; multitask, n=8).

Student engagement levels associated with each type of configuration were calculated. Comparison of the mean levels of engagement for each type of configuration showed no statistical differences. The range of engagement levels associated with each configuration suggested that teachers are able to maintain more consistent levels of student engagement during activities structured in the recitation configuration. Considerably higher, as well as lower, engagement levels were recorded in the class-task and multitask configurations. The highest and lowest engagement levels occurred in the least structured, multitask configuration.

As Figure 1 shows, the highly structured, recitation configuration appears to be associated with more consistent engagement levels than either the class-task or multitask configurations.

Insert Figure 1 about here

Closer examination of the configurations employed by the six participating teachers was conducted. The predominant configurations employed by each teacher were identified and categorized as high-structure or low-structure configurations. The extent of high-structure configurations

employed by each teacher in their arithmetic and reading lessons is shown in Figure 2.

Insert Figure 2 about here

Student engagement levels were lowest for Jones and Cane, who most consistently used a single, predominant activity structure configuration. In fact, Jones, with the lowest student engagement levels, used almost exclusively the recitation configuration.

The highest student engagement levels were observed in the classes of Holmes and Ray. Substantial variations in the types of activity structure configurations were observed in the classes of both Holmes and Ray.

Except for Jones, each teacher structured activity in arithmetic and reading differently (Jones employed the recitation structure in both subject areas). The nature of Jones' participation in activities changed little. He prescribed tasks, directed the work, and constantly supervised student behavior. In contrast, the nature of Ray's participation varied considerably from that of director/supervisor to one of resource person, only peripherally involved in any one of several activities.

While most of the activities were categorized according to three general structures, variations within a general type of configuration were evident. For example, in Holmes' multitask configurations

during arithmetic, extensive choice was afforded students in terms of what tasks to pursue. Holmes infrequently scanned the classroom to check on student progress. In Ray's multitask configurations during arithmetic, little student choice of task was observed. However, after assigning tasks, students were allowed to work with the partners of their choosing. Creative and individual solutions to the problems encountered were encouraged. Solution to problems by way of a standard algorithm was rarely mentioned. Ray's supervision was intermittent, but more systematic than that of Holmes.

Discussion

Classroom observations of elementary school academic activities repeatedly evidence the persistence of recitation. As an instructional paradigm, recitation represents highly structured, academic activity typically occurring in large group settings. During recitation, the teacher is engaged continuously. The teacher identifies the task and the members of the work groups, reads or follows with the reader, generates relevant questions, solves problems, elaborates on the answers, evaluates, and so on.

High teacher engagement of this sort may not necessarily yield the expected payoffs in terms of student learning outcomes. In many cases it appears that the goal of this high teacher engagement is order, rather than student learning engagement. This suggests that the tasks are selected, not so much for their instructional value as for their structuring effects on student activity — and so the students often appear busy and orderly.

As students grow more adept in the ways of the classroom they learn to look orderly; they can appear busy. In effect, students can simulate learning engagement by being orderly. Consequently, the use of the recitation configuration may enable teachers to establish and maintain order at the expense of learning engagement.

Teachers appear to vary the types of activity structures in systematic ways. The activity structures observed varied widely across teachers as well as subject areas. Additionally, within general types of configurations teachers create their own instructional signatures which result in subtle, but different learning environments for students.

Table 1

Observation Codes for Activity Structure and Student Engagement

Setting	Supervision	Work Group	Task	Process	Product	Student Engagement
1. Large group with Teacher	1. Continuous	1. Student assigned	1. Student assigned	1. Student assigned	1. Student assigned	1. Engaged
2. Large group no Teacher	2. Intermittent	2. Student chooses	2. Student chooses	2. Student chooses	2. Student chooses	2. Not Engaged
3. Small group with Teacher	3. Little or None					3. Can't Tell
4. Small group no Teacher						
5. Individual						

Table 2

Teacher Behavior Codes

D = Teacher directs students. Directions often come in the form of an interrogative (e.g., "Will you read next, John ? ")

Q = Teacher questions students. (Question should require an answer.)

I = Teacher informs students with additional facts, elaborates, and provides examples.

F = Teacher provides positive or negative feedback. Use an F+ to indicate positive feedback & F- to indicate negative feedback.

S = Teacher surveys, or monitors the class activities.

Figure 1

Student Engagement Percentages During
Three Types of Lesson Structure

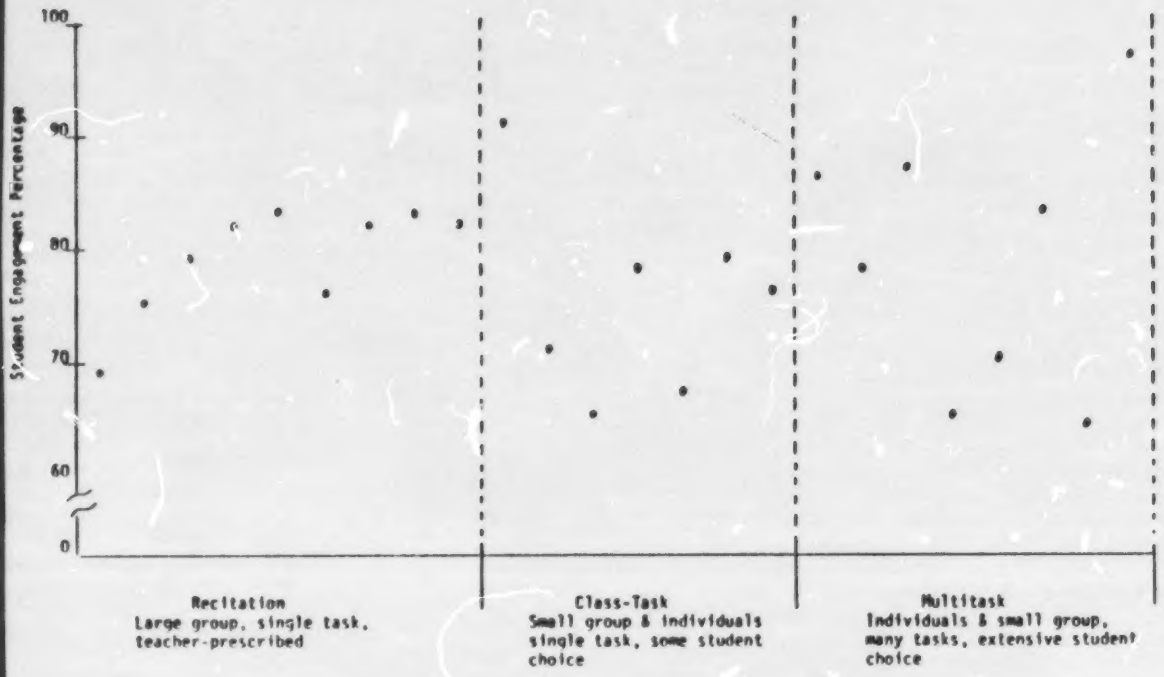
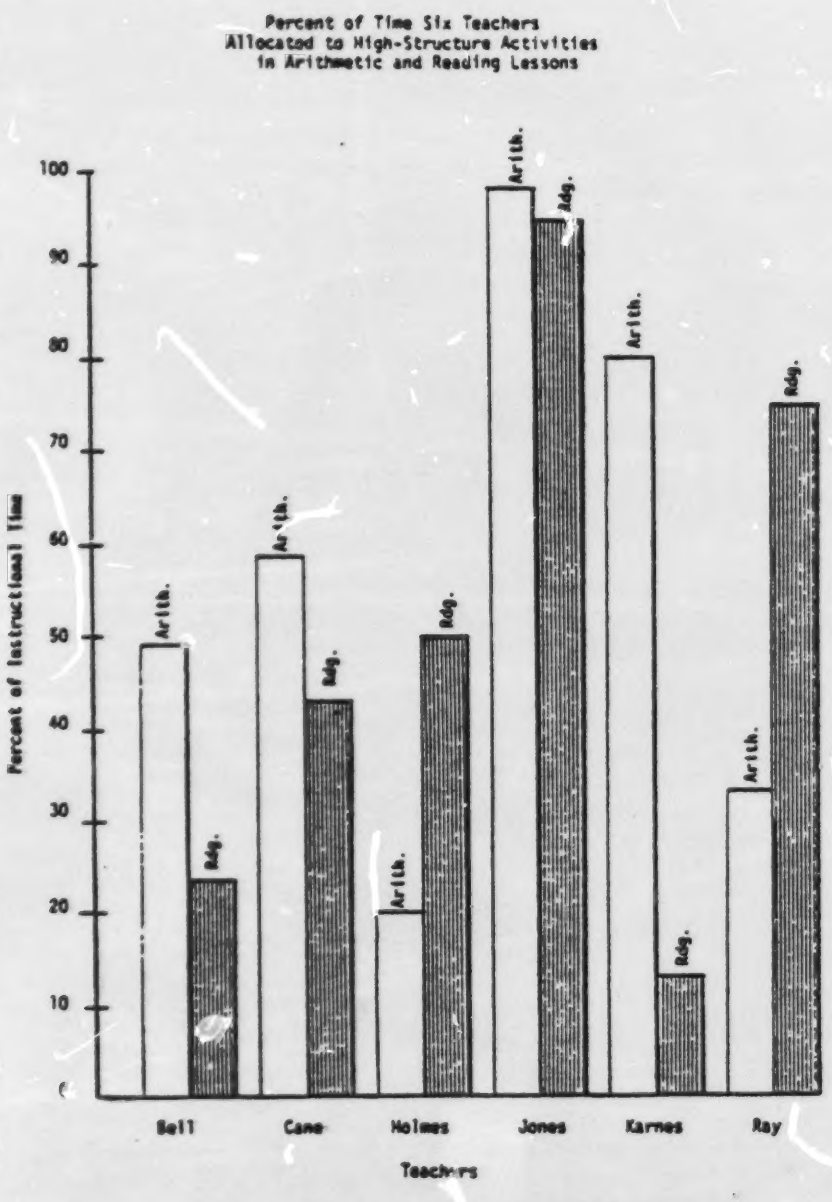


Figure 2


Percent of Time Six Teachers
Allocated to High-Structure Activities
in Arithmetic and Reading Lessons
Percent of Instructional Time
100
90
80
70
60
50
40
30
20
10
0
Arith.
Rdg.
Bell
Cane
Holmes
Jones
Karnes
Ray
Teachers

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